

REMARKS

Applicant respectfully requests reconsideration and continued examination of this application, particularly in view of the following remarks. After entry of the present amendments, claims 1-40 are pending in this application.

1. Status of the Claims

Claims 1, 16 and 29 have been amended. Support for these amendments is found in the specification at page 7 lines 19-23 and FIGS. 2-9.

2. 35 U.S.C. § 112 Rejections

Claim 16 was rejected under 35 U.S.C. § 112 first paragraph as the term "maintaining the bottle in an inverted position throughout the entire sterilization process" was determined to be unsupported by the application. This language has been removed from claim 16.

3. Prior Art Rejections

Claims 1-2, 5-8, 10-17, 20-22, 24-29, 33-36, and 38-40 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,326,032 to Richter et al. (Richter) in view of U.S. Patent No. 5,368,828 to Carlson (Carlson). Claims 3-4, 9, 18-19, 23, 31-32 and 37 were rejected under 35 U.S.C. § 103(a) as being obvious over Richter in view of Carlson and in further view of U.S. Patent No. 4,566,251 to Spisak (Spisak). Applicant respectfully traverses these rejections for the reasons set forth below.

None of the references, either alone or in combination, teach or suggest the claimed invention wherein an atomized sterilizing agent is introduced from an exterior location into an inverted bottle having an opening that prevents atomized particles from impinging directly on a portion of the bottle interior surface. Richter has no disclosure regarding atomized sterilant or the position of the spray apparatus relative to the bottle opening. Richter also has no disclosure of inverted bottles.

Carlson teaches away from the present claims as the Carlson apparatus sprays sterilant into the interior of an upright container. Moreover, the Carlson container openings are as wide as the container body enabling line of sight direct impingement of the sterilizing agent and the insertion of drying mandrels into the container interior. Carlson, col. 3 lines 8-40, FIG. 1. Spisak similarly teaches away from the claimed invention as the Spisak container openings are as wide as the container body allowing for insertion of mandrels into the container interior. Spisak, col. 2 lines 48-60, FIG. 1A. In addition, Spisak discloses that sterilant is introduced into upright containers. Spisak, col. 5 lines 10-28, FIG. 3.

Combining Richter, Carlson and Spisak fails to supply the deficiencies of each reference. None of the references teach or suggest introducing atomized sterilant to an inverted bottle when the atomized spray is located exteriorly of the bottle opening without line of sight impingement to all interior bottle surfaces.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

CONCLUSION

In conclusion, pending claims 1-40 are allowable and an early indication of allowance is solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "J.D. Ryndak", written over a horizontal line.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

The claims have been amended as follows.

1. (Three Times Amended) A bottle sterilizing system comprising:

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a plurality of inverted bottles, each inverted bottle having an interior and exterior surface, a body portion and an opening, said opening having a width smaller than the width of the body portion that prevents introduction of particles from a source located exteriorly of the bottle from impinging directly on at least a portion of the interior surface of each bottle;

a source of a liquid sterilizing agent;

means for introducing said sterilizing agent onto the interior surface of said inverted bottle from a location exterior to [of] said opening [bottle] in the form of discrete atomized liquid particles by contacting the bottle interior surface with said particles to form at least a thin liquid film thereon, present in sufficient concentration to substantially eliminate microbial contamination on the interior surface of said bottle after being in contact with said liquid film for a sufficient period of time; and

means for substantially removing said sterilizing agent from said bottle interior surface after said bottle is sterilized as desired.

16. (Three Times Amended) A bottle sterilization process comprising:

providing at least one inverted bottle having an interior and exterior surface, a body portion and an opening, said opening having a width smaller than the width of the body portion that prevents introduction of particles from a source located exteriorly of the bottle from impinging directly on at least a portion of the interior surface of each bottle;

introducing a sterilizing agent in the form of discrete atomized liquid particles from a location exterior to [of] said opening [bottle] onto the interior bottle surface;

contacting the bottle surface with said particles whereby said particles form a thin liquid film on the entire interior bottle surface;

maintaining the sterilizing agent on the surface of said bottle for a fixed period of time sufficient to reduce to a desired level the amount of active microorganisms on said interior surface; and

removing said sterilizing agent from substantially all the interior and exterior surfaces after said surfaces are sterilized as desired[; and]

[maintaining the bottle in an inverted position throughout the entire sterilization process].

29. (Twice Amended) A bottle sterilization apparatus comprising:

at least one inverted bottle having an interior and exterior surface, a body portion and an opening, said opening having a width smaller than the width of the body portion that prevents introduction of particles from a source located exteriorly of the bottle from impinging directly on at least a portion of the interior surface of said bottle;

a conveyor for moving said bottle in an inverted position;

a source of a liquid sterilizing agent in the form of atomized liquid particles;

at least one nozzle disposed under and exterior to said opening [bottle] for introducing said sterilizing agent [from a location exterior of said bottle] onto the interior surface of the bottle in the form of discrete atomized liquid particles by contacting the bottle interior surface with said particles to form at least a thin liquid film thereon, present in sufficient concentration to substantially eliminate microbial contamination on the surfaces of said bottle in contact with said liquid film; and

a rinsing device for substantially removing said sterilizing agent from said bottle surfaces after said bottle is sterilized as desired.